REJECTIONS UNDER 35 U.S.C. § 103:

Claims 20-35 are rejected under 35 U.S.C. § 103 as being unpatentable over Giordano in view of Kenny.

Giordano discloses a thermal sensor for integrated circuits. Kenny discloses a heat regulator for integrated circuits which may be incorporated into a microprocessor, and discloses in columns 3 and 4 that the heat regulator is programmable. On page 5 of the office action, it is stated that the power use ratio and the regulation delay disclosed by Kenny are programmable. However, this programmability is taught in Kenny to include hardwiring into the circuit a threshold value at which the counter will trigger temperature control activities (columns 3, 4). Kenny discloses (Fig. 1 and column 5 lines 67-68) that the threshold value is hardwired at a value of binary 1000. Kenny further teaches that the threshold temperature is determined by experimentation, then appropriate values for the power use ratio and the regulation delay are selected from the experimental data and preset into the circuit (column 4, lines 59-65). Kenny further discloses that one of several preset, or hardwired, power use ratios and regulation delays may be selected by changing select lines (Fig. 2 and column 7). However, there is no teaching in Kenny that instructions are executed to cause some undisclosed circuitry to change the select lines. The select lines may be hardwired prior to circuit operation.

On page 5 of the office action, it is stated that it is inherent in the invention of Kenny that a microprocessor executes the threshold temperature. However, there is no teaching in Kenny that any instructions are executed. An argument of inherency mandates that the only way Kenny is programmable is through execution of instructions. To the contrary and as discussed above, Kenny teaches that the rate at which the counter increments and the threshold value that triggers temperature regulation are hardwired into the circuit (Fig. 1 and column 5, lines 62-68).

In the claimed invention, the threshold temperature is programmed by the microprocessor executing instructions to generate a representative of the threshold temperature. For example, claim 20 claims:

"... processing means for executing a plurality of instructions, said instructions including instructions for generating a value representative of a threshold temperature for said microprocessor ..."

Thus, in the present claimed invention, the threshold temperature is not preset or hardwired into the circuit, as is the case in Kenny. The claimed invention has the distinct advantage of being truly programmable, that is the threshold temperature may be varied at any time. Kenny does not execute instructions to generate a value representative of a threshold temperature, and does not teach towards nor disclose such a concept. To the contrary, Kenny teaches away from the concept of a microprocessor executing instructions to generate a representative of a threshold temperature by teaching that the threshold value for triggering temperature regulation is hardwired into the circuit (Fig. 1 and column 5, lines 67-68), and that the power use ratio and the regulation delay are pre-determined (columns 3, 4).

Similarly, claim 27 is neither taught nor disclosed by the Giordano and Kenny references, alone or in combination. For example, Giordano and Kenny neither teach nor disclose

"... a processing unit for executing operations in accordance with a plurality of instructions, said processing unit including a read only memory (ROM) storing a microprogram and an internal register, said microprogram, when executed, generating representative of a threshold temperature for said microprocessor, and storing said value in said internal register ..."

In addition, claim 34 is not taught or disclosed by the Giordano and Kenny references. Giordano and Kenny, alone or in combination, do not teach or disclose a thermal sensing circuit, a programmable thermal sensor that selectively generates a detect signal that triggers an interrupt, an interrupt handler, an output display for displaying a message that the microprocessor attained the threshold temperature, and a memory for storing instructions and data, including an operating system and interrupt service routine. As discussed above, the execution of instructions in a microprocessor is not inherent to the invention of Kenny. Therefore, it is not inherent that the

invention of Kenny would execute an interrupt service routine, or would include a memory for storing instructions and data.

On page 5 of the office action it is stated that Kenny discloses a trigger circuit for interrupt device operation and also discloses an interrupt handling mechanism. However, the signals in Figs. 2 and 4 referred to on page 5 of the office action are merely trigger signals, as disclosed by Kenny in columns 8 and 9. In column 9, lines 34-37, Kenny discloses that once the trigger signal is asserted, several ways are used to cool a circuit, including slowing down the clock speed for the circuit or triggering fans or refrigeration. Kenny does not disclose or teach towards interrupt handling or executing an interrupt service routine, as claimed in claim 34 of the present invention.

For the same reasons noted above with respect to independent claims 20, 27, and 34, corresponding dependent claims 21-26, 28-33, and 35 are distinguished over the Giordano and Kenny references.

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CONCLUSION:

In view of the foregoing, Applicant submits that claims 20-35 are distinguished over the cited art and are in condition for allowance. Allowance of claims 20-35 is respectfully requested.

Respectfully submitted,
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